

WHAT IS CLAIMED IS:

1. A communication gateway apparatus to be coupled between a server and a client, comprising:

5 a reception unit configured to receive a content transferred from the server to the client;

an extraction unit configured to extract a script program from the received content;

10 a storage to store transfer destination information representing a plurality of transfer destinations designated as authentic;

an inspection unit configured to inspect the script program to detect that the script program has a function of transferring any one of information stored in the client and the received content, thereby  
15 identifying at least one transfer destination of the information;

a determination unit configured to determine whether or not transfer of the content is permitted, by collating the identified transfer destination of the  
20 information with the plurality of transfer destinations of the destination information; and

a transmission unit configured to transmit the content to the client only when the determination unit determines that transfer is permitted.

25 2. The apparatus according to claim 1, wherein the inspection unit identifies a plurality of transfer destinations of the information, and wherein the

determination unit determines that transfer is permitted only if all the transfer destinations of the information are within the plurality of transfer destinations of the destination information.

5           3. The apparatus according to claim 1, wherein the inspection unit is further configured to output, if the transfer destination of the information is unidentifiable, an arbitrary transfer destination, and the determination unit determines that transfer of the  
10           content is not permitted.

          4. The apparatus according to claim 1, wherein the information includes cookie information held in a Web browser running in the client.

          5. The apparatus according to claim 1, wherein  
15           the destination information includes any one of a list of permitted URLs and regular expressions.

          6. A communication gateway apparatus to be  
coupled between a server and a client, comprising:

          a reception unit configured to receive a content  
20           having an input form and transferred from the server to the client;

          an extraction unit configured to extract a script program from the received content;

          a storage to store transfer destination information representing a plurality of transfer destinations  
25           designated as authentic;

          an inspection unit configured to inspect the

script program to detect that the script program has a function of changing a transmission destination of the input form, thereby identifying at least one changed transfer destination of the input form;

5           a determination unit configured to determine whether or not transfer of the content is permitted, by collating the changed transfer destination of the input form with the plurality of transfer destinations of the destination information; and

10           a transmission unit configured to transmit the content to the client only when the determination unit determines that transfer is permitted.

7. The apparatus according to claim 6, wherein the inspection unit identifies a plurality of changed transfer destinations of the input form, and wherein  
15           the determination unit determines that transfer is permitted only if all the changed transfer destinations of the input form are within the plurality of transfer destinations of the destination information.

20           8. The apparatus according to claim 6, wherein the inspection unit is further configured to output, if the changed transfer destination of the input form is unidentifiable, an arbitrary transfer destination, and the determination unit determines that transfer of the  
25           content is not permitted.

9. The apparatus according to claim 6, wherein the destination information includes any one of a list

of permitted URLs and regular expressions.

10. A communication gateway apparatus to be coupled between a server and a client, comprising:

5 a reception unit configured to receive a content having a first input form and transferred from the server to the client;

an extraction unit configured to extract a script program from the received content;

10 a storage to store request destination information representing a plurality of request destinations designated as authentic;

15 an inspection unit configured to inspect the script program to detect that the script program has a function of requesting an external content having a second input form to be used in place of the first input form, thereby identifying at least one request destination of the external content;

20 a determination unit configured to determine whether or not transfer of the content is permitted, by collating the identified request destination of the external content with the plurality of the request destinations of the destination information; and

25 a transmission unit configured to transmit the content to the client only when the determination unit determines that transfer is permitted.

11. The apparatus according to claim 10, wherein the inspection unit identifies a plurality of request

destinations of the external content, and wherein  
the determination unit determines that transfer is  
permitted only if all the request destinations of the  
external content are within the plurality of request  
5 destinations of the destination information.

12. The apparatus according to claim 10, wherein  
the inspection unit is further configured to output, if  
the request destination of the external content is  
unidentifiable, an arbitrary request destination, and  
10 the determination unit determines that transfer of the  
content is not permitted.

13. The apparatus according to claim 10, wherein  
the destination information includes any one of a list  
of permitted URLs and regular expressions.

15 14. A communication gateway apparatus to be  
coupled between a server and a client, comprising:

a reception unit configured to receive a content  
having a form and transferred from the server to the  
client;

20 an extraction unit configured to extract a script  
program from the received content;

a storage to store request destination information  
representing a plurality of request destinations  
designated as authentic;

25 an inspection unit configured to inspect the  
script program to detect that the script program has a  
function of requesting an external content having an

input form to be inserted within the form, thereby identifying at least one request destination of the external content;

5 a determination unit configured to determine whether or not transfer of the content is permitted, by collating the identified request destination of the external content with the plurality of the request destinations of the destination information; and

10 a transmission unit configured to transmit the content to the client only when the determination unit determines that transfer is permitted.

15 15. The apparatus according to claim 14, wherein the inspection unit identifies a plurality of request destinations of the external content, and wherein the determination unit determines that transfer is permitted only if all the request destinations of the external content are within the plurality of request destinations of the destination information.

20 16. The apparatus according to claim 14, wherein the inspection unit is further configured to output, if the request destination of the external content is unidentifiable, an arbitrary request destination, and the determination unit determines that transfer of the content is not permitted.

25 17. The apparatus according to claim 14, wherein the destination information includes any one of a list of permitted URLs and regular expressions.

18. A communication gateway apparatus to be coupled between a server and a client, comprising:

a reception unit configured to receive a content transferred from the server to the client;

5 an extraction unit configured to extract a script program from the received content;

a storage to store transfer destination information representing a plurality of transfer destinations designated as authentic;

10 an inspection unit configured to inspect the script program to detect that the script program has a function of adding an input form to the received content, and a function of transferring the input form, thereby identifying at least one transfer destination  
15 of the input form;

a determination unit configured to determine whether or not transfer of the content is permitted, by collating the identified transfer destination of the information with the plurality of transfer destinations  
20 of the destination information; and

a transmission unit configured to transmit the content to the client only when the determination unit determines that transfer is permitted.

19. The apparatus according to claim 18, wherein  
25 the inspection unit identifies a plurality of transfer destinations of the input form, and wherein the determination unit determines that transfer is

permitted only if all the transfer destinations of the information are within the plurality of transfer destinations of the destination information.

20. The apparatus according to claim 18, wherein  
5 the inspection unit is further configured to output, if the transfer destination of the information is unidentifiable, an arbitrary transfer destination, and the determination unit determines that transfer of the content is not permitted.

10 21. The apparatus according to claim 18, wherein the destination information includes any one of a list of permitted URLs and regular expressions.

22. The apparatus according to claim 1, further comprising:

15 a document generation unit configured to generate a document by partially executing the extracted script program, and wherein the extraction unit further extracts another script program to be inspected from the document.

20 23. The apparatus according to claim 1, wherein when the determination unit determines that transfer is not permitted, the transmission unit transmits an error content to the client instead of the received content.

24. The apparatus according to claim 1, wherein  
25 when the determination unit determines that transfer is not permitted, the transmission unit transmits a message notifying that transfer is not permitted, to an



account of an administrator.

25. The apparatus according to claim 24, wherein the transmission unit adds at least the received content to the message and transmits the message.

5        26. A method of affording security of communication between a vulnerable server and a client, comprising:

          receiving a content transferred from the vulnerable server;

10        extracting a script program from the received content;

          inspecting the script program to identify a transfer destination of information, where transferring the information is caused by the client executing the script program;

15        collating the identified transfer destination of the information with a permitted transfer destination list; and

          transmitting the received content to the client only if the identified transfer destination of the information is within the permitted transfer destination list, so as to prevent the information from illicitly transferring to a malicious server.

25        27. A computer program product for affording security of communication between a vulnerable server and a client, comprising:

          means for instructing a computer to receive a

content transferred from the vulnerable server;

means for instructing the computer to extract a script program from the received content;

5 means for instructing the computer to inspect the script program to identify a transfer destination of information, where transferring the information is caused by the client executing the script program;

10 means for instructing the computer to collate the identified transfer destination of the information with a permitted transfer destination list; and

15 means for instructing the computer to transmit the received content to the client only if the identified transfer destination of the information is within the permitted transfer destination list, so as to prevent the information from illicitly transferring to a malicious server.